<u>Amendments to the Claims</u>:

Please amend Claims 1 through 9, 12 through 22, and 25 through 30 and add

Claims 31 through 36 to read, as follows.

1. **(Currently Amended)** An image processing method for determining a

conversion relationship by using patches, the conversion relationship relating to a

generation of color material data for an image output apparatus that outputs an image by

using a plurality <u>of</u> kinds of color material including a plurality of color materials of

<u>a</u> [[the]] same color but <u>differing</u> ~~different~~ in concentration, said method comprising the

steps of:

providing a maximum total color material use amount which is determined by

taking into account an adhesion characteristic of each of the plurality <u>of</u> kinds of color

material to a printing medium used when the image output apparatus outputs the patches;

determining, for each of <u>the</u> patches, a combination of data for the plurality <u>of</u> kinds

of color material constituting <u>a</u> [[the]] patch within a range of the maximum total color

material use amount; and

determining a predetermined conversion relationship relating to the generation of

color material data of the plurality <u>of</u> kinds of color material including a plurality of color

materials of <u>a</u> [[the]] same color but <u>differing</u> ~~different~~ in concentration, on the basis of

colorimetric values of the patches which are outputted based on the determined

combinations of data for the plurality <u>of</u> kinds of color material for the patches.

2. **(Currently Amended)** An image processing method as claimed in claim 1, further comprising the step of determining a defined total color material use amount within the range of maximum total color material use amount, and wherein said step of determining the combination of data determines the combination of data for the plurality of kinds of color material within a [[the]] range of the defined total color material use amount.

3. **(Currently Amended)** An image processing method as claimed in claim 1, further comprising the step of obtaining information on determining [[of]] the defined total color material use amount, the information being previously set, and wherein said step of determining the defined total color material use amount determines the defined total color material use amount in accordance with the information.

4. **(Currently Amended)** An image processing method as claimed in claim 1, wherein said step of determining the combination of data determines the combination of data for the plurality of kinds of color material including only a [[the]] color material having a higher concentration among the plurality of color materials of the same color but differing different in concentration, concentrations, and said step of determining the predetermined conversion relationship separates the data for the color material having the higher concentration to make data for the plurality of color materials of the same color but differing different in concentration concentrations so that the predetermined conversion relationship relating to the generation of the color material data for the plurality of kinds of color material is determined.

5. **(Currently Amended)** An image processing method as claimed in claim 4,

wherein colors of the plurality of kinds of color material are yellow, magenta, cyan and

black, and the color materials of magenta and cyan are separated so that the predetermined

conversion relationship for generating data for six kinds of color material is determined.

6. **(Currently Amended)** An image processing method as claimed in claim 1,

wherein said step of determining the combination of color material data determines data for

the plurality of kinds of color material including all of the plurality of color materials of the

same color but differing ~~different~~ in concentration. ~~concentrations.~~

7. **(Currently Amended)** An image processing method as claimed in claim 4,

wherein colors of the plurality kinds of color material are yellow, magenta, cyan, black, and

light magenta having a lower concentration than the magenta and light cyan having a lower

concentration than [[the]] cyan.

8. **(Currently Amended)** An image processing method as claimed in claim 4,

wherein said step of determining the predetermined conversion relationship

determines a ratio of each the color materials having the same color but differing in

~~different~~ concentration on the basis of the combinations of color material data for the

plurality of kinds of color material, for each of the patches; ~~patches,~~

determines a total use amount of each the color materials having the same color but

differing in ~~different~~ concentration, on the basis of the determined ratio of each the color

materials having the same color, the [[a]] total use amount of the plurality of kinds of color

- 7 -

material including all of the color materials having the same color but <u>being</u> different <u>in</u> concentration and a use amount of color materials excluding the color materials having the same color but <u>differing in</u> ~~different~~ concentration from the plurality <u>of</u> kinds of color material; and

separates the color material data for the color <u>materials</u> ~~material~~ having <u>a</u> higher concentration to generate color material data for each of the color materials having the same color but <u>differing in</u> ~~different~~ concentration, on the basis of the total use amount of each the color materials having the same color, <u>a</u> [[the]] colorimetric value of the patches outputted for the combinations of the color materials having the same color but <u>differing in</u> ~~different~~ concentration.

9. **(Currently Amended)** An image processing method as claimed in claim 1, wherein the predetermined conversion relationship is determined in accordance with a condition that a target color is a color having <u>a</u> [[the]] highest saturation for each of six hues of yellow, magenta, cyan, red, green and blue.

10. **(Original)** An image processing method as claimed in claim 1, wherein the color material is ink.

11. **(Original)** An image processing method as claimed in claim 1, wherein the color material is toner.

12. **(Currently Amended)** An image processing method as claimed in claim 9, wherein the target colors in six hues of yellow, magenta, cyan, red, green and blue are colors changing in an [[a]] L^*C^* plane from white to black through yellow, from white to black through magenta, from white to black through cyan, from white to black through red, from white to black through green, and from white to black through blue, respectively.

13. **(Currently Amended)** An image processing method as claimed in claim 12, wherein the target color is determined as a line in the L^*C^* plane which is formed by joining a target line that does not include black at all onto a target line that include black maximally by means of a continuous function from a predetermined point on a L^*.

14. **(Currently Amended)** An image processing apparatus for determining a conversion relationship by using patches, the conversion relationship relating to a generation of color material data for an image output apparatus that outputs an image by using a plurality of kinds of color material including a plurality of color materials of a [[the]] same color but differing different in concentration, said apparatus comprising:

holding means for holding a maximum total color material use amount which is determined by taking into account an adhesion characteristic of each of the plurality of kinds of color material to a printing medium used when the image output apparatus outputs the patches;

combination determining means for, for each of the patches, determining a combination of data for the plurality of kinds of color material constituting a [[the]] patch within a range of the maximum total color material use amount; and

color separation means for determining a predetermined conversion relationship relating to the generation of color material data of the plurality of kinds of color material including a plurality of color materials of a [[the]] same color but differing ~~different~~ in concentration, on the basis of colorimetric values of the patches which are outputted based on the determined combinations of data for the plurality of kinds of color material for the patches.

15. **(Currently Amended)** An image processing apparatus as claimed in claim 14, further comprising defined use amount determining means for determining a defined total color material use amount within the range of maximum total color material use amount, and wherein said combination determining means determines the combination of data for the plurality of kinds of color material within a [[the]] range of the defined total color material use amount.

16. **(Currently Amended)** An image processing apparatus as claimed in claim 15, further comprising means for obtaining information on determining [[of]] the defined total color material use amount, the information being previously set, and wherein said defined use amount determining means determines the defined total color material use amount in accordance with the information.

17. **(Currently Amended)** An image processing apparatus as claimed in claim 14, wherein said combination determining means determines the combination of data for the plurality of kinds of color material including only a [[the]] color material having a higher

concentration among the plurality of color materials of the same color but <u>differing</u> ~~different~~ in <u>concentration,</u> ~~concentrations,~~ and said color separation means separates the data for the color material having higher <u>the</u> concentration to make data for the plurality of color materials of the same color but <u>differing</u> ~~different~~ in <u>concentration</u> ~~concentrations~~ so that the predetermined conversion relationship relating to the generation of the color material data for the plurality <u>of</u> kinds of color material is determined.

18. **(Currently Amended)** An image processing apparatus as claimed in claim 17, wherein colors of the plurality <u>of</u> kinds of color material are yellow, magenta, cyan and black, and the color materials of magenta and cyan are separated so that the predetermined conversion relationship for generating data for six kinds of color material is determined.

19. **(Currently Amended)** An image processing apparatus as claimed in claim 14, wherein said combination determining means determines data for the plurality <u>of</u> kinds of color material including all of the plurality of color materials of the same color but <u>differing</u> ~~different~~ in <u>concentration.</u> ~~concentrations.~~

20. **(Currently Amended)** An image processing apparatus as claimed in claim 19, wherein colors of the plurality kinds of color material are yellow, magenta, cyan, black, and light magenta having <u>a</u> lower concentration than the magenta and light cyan having <u>a</u> lower concentration than [[the]] cyan.

21. **(Currently Amended)** An image processing apparatus as claimed in claim 17, wherein said color separating means

determines a ratio of each the color materials having the same color but <u>differing in</u> ~~different~~ concentration on the basis of the combinations of color material data for the plurality <u>of</u> kinds of color material, for each of the <u>patches;</u> ~~patches,~~

determines a total use amount of each the color materials having the same color but <u>differing in</u> ~~different~~ concentration, on the basis of the determined ratio of each the color materials having the same color, <u>the</u> [[a]] total use amount of the plurality <u>of</u> kinds of color material including all of the color materials having the same color but <u>differing in</u> ~~different~~ concentration and a use amount of color materials excluding the color materials having the same color but <u>differing in</u> ~~different~~ concentration from the plurality <u>of</u> kinds of color material; and

separates the color material data for the color <u>materials</u> ~~material~~ having higher <u>a</u> concentration to generate color material data for each of the color materials having the same color but <u>differing in</u> ~~different~~ concentration, on the basis of the total use amount of each the color materials having the same color, <u>a</u> [[the]] colorimetric value of the patches outputted for the combinations of the color materials having the same color but <u>differing in</u> ~~different~~ concentration.

22. **(Currently Amended)** An image processing apparatus as claimed in claim 14, wherein the predetermined conversion relationship is determined in accordance with a condition that a target color is a color having <u>a</u> [[the]] highest saturation for each of six hues of yellow, magenta, cyan, red, green and blue.

- 12 -

23. **(Original)** An image processing apparatus as claimed in claim 14, wherein the color material is ink.

24. **(Original)** An image processing apparatus as claimed in claim 14, wherein the color material is toner.

25. **(Currently Amended)** An image processing apparatus as claimed in claim 22, wherein the target colors in six hues of yellow, magenta, cyan, red, green and blue are colors changing in an [[a]] L^*C^* plane from white to black through yellow, from white to black through magenta, from white to black through cyan, from white to black through red, from white to black through green, and from white to black through blue, respectively.

26. **(Currently Amended)** An image processing apparatus as claimed in claim 25, wherein the target color is determined as a line in the L^*C^* plane which is formed by joining a target line that does not include black at all onto a target line that include black maximally by means of a continuous function from a predetermined point on a L^*.

27. **(Currently Amended)** A program readable [[read]] by a computer to make the computer execute [[an]] image processing for determining a conversion relationship by using patches, the conversion relationship relating to a generation of color material data for an image output apparatus that outputs an image by using a plurality of kinds of color material including a plurality of color materials of the same color but differing different in concentration, said image processing comprising the steps of:

providing a maximum total color material use amount which is determined by taking into account an adhesion characteristic of each of the plurality of kinds of color material to a printing medium used when the image output apparatus outputs the patches;

determining, for each of the patches, a combination of data for the plurality of kinds of color material constituting a [[the]] patch within a range of the maximum total color material use amount; and

determining a predetermined conversion relationship relating to the generation of color material data of the plurality of kinds of color material including a plurality of color materials of the same color but differing different in concentration, on the basis of colorimetric values of the patches which are outputted based on the determined combinations of data for the plurality of kinds of color material for the patches.

28. **(Currently Amended)** A program as claimed in claim 27, wherein said image processing further comprises the step of determining a defined total color material use amount within the range of maximum total color material use amount, and said step of determining the combination of data determines the combination of data for the plurality of kinds of color material within a [[the]] range of the defined total color material use amount.

29. **(Currently Amended)** A storage medium storing a program readably by a computer, the program making the computer execute an image processing for determining a conversion relationship by using the patches, the conversion relationship relating to a generation of color material data for an image output apparatus that outputs an image by using a plurality of kinds of color material including a plurality of color materials of a

[[the]] same color but <u>differing</u> ~~different~~ in concentration, said image processing

comprising the steps of:

providing a maximum total color material use amount which is determined by

taking into account an adhesion characteristic of each of the plurality <u>of</u> kinds of color

material to a printing medium used when the image output apparatus outputs the patches;

determining, for each of <u>the</u> patches, a combination of data for the plurality <u>of</u> kinds

of color material constituting <u>a</u> [[the]] patch within a range of the maximum total color

material use amount; and

determining a predetermined conversion relationship relating to the generation of

color material data of the plurality <u>of</u> kinds of color material including a plurality of color

materials of <u>a</u> [[the]] same color but <u>differing</u> ~~different~~ in concentration, on the basis of

colorimetric values of the patches which are outputted based on the determined

combinations of data for the plurality <u>of</u> kinds of color material for the patches.

30. **(Currently Amended)** A storage medium as claimed in claim 29, wherein

said image processing further comprises the step of determining a defined total color

material use amount within the range of maximum total color material use amount, and

said step of determining the combination of data determines the combination of data for the

plurality <u>of</u> kinds of color material within <u>a</u> [[the]] range of the defined total color material

use amount.

--31. **(New)** An image processing method for determining a conversion

relationship using patches, a conversion relationship relating to a generation of color

material data for an image output apparatus that outputs an image using at least five color materials, said method comprising the steps of:

providing a maximum total color material use amount which is based on an adhesion characteristic of the color materials to a printing medium used by the image output apparatus;

determining a combination of data to output the patches using the color materials within a range of the maximum total color material use amount; and

determining a predetermined conversion relationship relating to the generation of color material data of the color materials on the basis of measured values of the patches which are outputted based on the predetermined combinations.

32. **(New)** An image processing method as claimed in claim 1, wherein the color materials include light magenta and light cyan.

33. **(New)** An image processing method as claimed in claim 1, wherein the maximum total color material use amount is determined by a type of printing medium.

34. **(New)** A program readable by a computer to make the computer execute image processing for determining a conversion relationship using patches, a conversion relationship relating to a generation of color material data for an image output apparatus that outputs an image using at least five color materials, said image processing comprising the steps of:

providing a maximum total color material use amount which is based on an adhesion characteristic of the color materials to a printing medium used by the image output apparatus;

determining a combination of data to output the patches using the color materials within a range of the maximum total color material use amount; and

determining a predetermined conversion relationship relating to the generation of color material data of the color materials on the basis of measured values of the patches which are outputted based on the predetermined combinations.

35. (New) A program as claimed in claim 1, wherein the color materials include light magenta and light cyan.

36. (New) A program as claimed in claim 1, wherein the maximum total color material use amount is determined by a type of printing medium.--